

APR 30 2004

PTO/SB/08A (08-03)

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Application Number	10/669.977
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10/669.977

Filing Date	September 24, 2003
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September 24, 2003

First Named Inventor	Cai, et al.
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Cai, et al.

Art Unit	1754
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1750

Examiner Name

Attorney Docket Number	P-1111B
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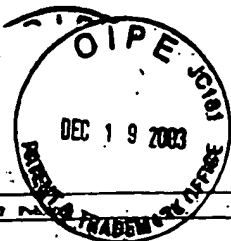
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P-173-1097

FORM 6-21

6-39

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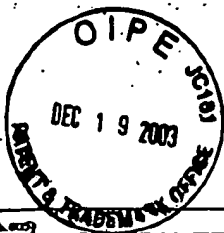
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CAJ		D.S. Newsome, Catal. Rev., 21, p. 275 (1980)	
		Ginés, M.J.L., et al. "Activity and structure-sensitivity of the water-gas shift reaction over Cu-Zn-Al mixed oxide catalysts," Applied Catalysts A: General 131, pages 283-296, 295 (1995)	
		M.J.L. Ginés and C.R. Apesteguia, "Thermal Decomposition of Cu-Based Hydroxycarbonate Catalytic Precursors for the Low-Temperature CO-Shift Reaction," Journal of Thermal Analysis 50, pages 745-756 (1997)	
		H. Topsøe and M. Boudart, J. Catal., 31, p. 346 (1973)	
		J. Van Brakel, et al., Powder Technology, 29, p.1 (1981)	
CAJ		Figueiredo, R. Tavares, et al. "Spectroscopic evidence of Cu-Al interactions in Cu-Zn-Al mixed oxide catalysts used in CO hydrogenation." Journal of Catalysts, 178, 146-152 (1998)	

Examiner Signature	<i>caj</i>	Date Considered	8/2/05
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**INFORMATION DISCLOSURE
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OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS

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CAJ		Figueiredo, R. T., et al. "The role of the coprecipitation sequence of salt precursors on the genesis of Cu-ZnO-Al ₂ O ₃ catalysts. Synthesis, Characterization and Activity for Low Temperature Shift Reaction." Brazilian Journal of Chemical Engineering, Volume 5, No. 02, pages 168-176 (June, 1998)	
		T. Van Herwijnen, et al., "Kinetics and Mechanism of the CO Shift on Cu/ZnO," Journal of Catalysis, 63, 83-93 (1980)	
		Jae Sung Lee, et al., "A Comparative Study of Methanol Synthesis from CO ₂ /H ₂ and CO/H ₂ over a Cu/ZnO/Al ₂ O ₃ Catalyst," Research Center for Catalytic Tech., Pohang Univ. of Science and Tech. (POSTECH) and Res. Inst. of Ind. Science and Tech. (RIST) (1993)	
CAJ		John G. Nunan, et al., "Methanol Synthesis Catalysts Based on Cs/Cu/ZnO/M ₂ O ₃ (M=Al, Cr, Ga): Genesis from Coprecipitated Hydrotalcite-like Precursors, Solid-state Chemistry, Morphology and Stability," Inorg. Chemistry, 28, 3868-3874 (1989)	

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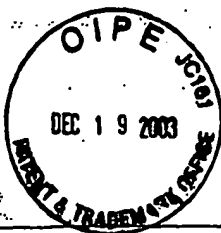
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Substitute for form 1462PTO

**INFORMATION DISCLOSURE
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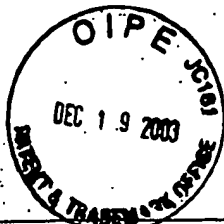
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CAT		N. Ray, et al., "Deactivation of Low Temperature Shift Catalyst," J. Res. Inst. Catalysis, Hokkaido Univ., Vol. 30, No. 1, pp. 25-38 (1982)	
		P. Gherardi, et al., "Preparation of Cu-Zn-Al Mixed Hydroxycarbonates Precursors of Catalysts for the Synthesis of ethanol at Low Pressure," Preparation of Catalysis III, 723-733 (1983)	
		C. Rhodes, et al. "Water-gas shift reaction: finding the mechanistic boundary," Catalysis Today, 43-58 (1995)	
		C.V. Ovesen, et al., "A Kinetic Model of the Water Gas Shift Reaction," J. of Catalysis, 134, 445-468 (1992)	
CAT		C. Busetto, et al., "Catalysts for Low-Temperature Methanol Synthesis. Preparation of Cu-Zn-Al Mixed Oxides via Hydrotalcite-like Precursors," J. of Catalysis, 85, 260-266 (1984)	

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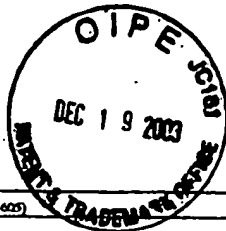
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CAS		J.-L. Li, et al., "Enhancement in methanol synthesis activity of a copper/zinc/aluminum oxide catalyst by ultrasonic treatment during the course of the preparation procedure," <i>Applied Catalysis A: General</i> , 139, 87-96 (1996)	
		R.H. Höppener, et al. "Preparation and Characterization of Stable Copper/Zinc Oxide/ Alumina catalysis for Methanol Synthesis," <i>Applied Catalysis</i> , 25, 109-119 (1986)	
CAS		F. Cavani, et al., "Hydrotalcite-type Anionic Clays: Preparation, Properties and Application" <i>Catalysis Today</i> , 11, 173-301 (1991)	

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CAY		S. Velu, et al., "Oxidative steam reforming of methanol over CuZnAl(Zr)-oxide catalysts; a new and efficient method for the production of CO-free hydrogen for fuel cells." <i>Chem. Commun.</i> , 2341-2342 (1999)	
		S. Velu, et al., "Selective production of hydrogen by partial oxidation of methanol over catalysts derived from CuZnAl-layered double hydroxides" <i>Catalysis Letters</i> 62, 159-167 (1999)	
		Gines, M.J.L., et al., "Activity and structure sensitivity of the water-gas shift reaction over Cu-Zn-Al mixed oxide catalysts." <i>Applied Catalysis A: General</i> 131, 283-296, (1995)	
		Gines, M.J.L., et al., "Thermal Decomposition of Cu-Based Hydroxycarbonate Catalytic Precursors for the Low-temperature CO-Shift Reaction." <i>Journal of Thermal Analysis</i> , 50, 745-756 (1997)	
		Hilmen, Anne-Mette, et al., "Synthesis of higher alcohols on copper catalysts supported on alkali-promoted basic oxides." <i>Applied Catalysis A: General</i> 169, 355-372, (1998)	
CAY		S. Velu, et al., Selective production of hydrogen for fuel cells via oxidative steam reforming of methanol over CuZnAl(Zr)-oxide catalysts." <i>Applied Catalysis A: General</i> 213, 47-63, (2001).	

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